

<b>Form PTO-1449</b> (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)			ATTY. DKT. NO. 5119-08601  APPLICANT: Choi et al.  FILING DATE: October 27, 2000			SERIAL NO. 09/698,317  GROUP: 2859	
U.S. PATENT DOCUMENTS							
EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
TMD	A1	3,807,027	4/1974	Heisler	29	423	
TMD	A2	3,807,029	4/1974	Troeger	29	436	
TMD	A3	3,811,665	5/1974	Seelig	26	RECEIVED	
TMD	A4	4,062,600	12/1977	Wyse	384	225	JUN 6 2002
TMD	A5	4,098,001	7/1978	Watson	33	644	
TMD	A6	4,155,169	5/1979	Drake et al.	33	GROUP 3600	
TMD	A7	4,202,107	5/1980	Watson	33	644	
TMD	A8	4,267,212	5/1981	Sakawaki	427	240	
TMD	A9	4,337,579	7/1982	De Fazio	33	644	
TMD	A10	4,355,469	10/1982	Nevins et al.	267	150	
TMD	A11	4,414,750	11/1983	De Fazio	267	166	
TMD	A12	4,451,507	5/1984	Beltz et al.	427	240	
TMD	A13	4,610,442	9/1986	Oku et al.	269	73	
TMD	A14	4,694,703	11/1987	Routson	79	5F	
TMD	A15	4,731,155	3/1988	Napoli et al.	266	44	
TMD	A16	4,763,886	8/1988	Takei	269	73	
TMD	A17	4,929,083	5/1990	Brunner	356	400	
TMD	A18	4,959,252	11/1990	Bonnebat et al.	428	64.7	
TMD	A19	5,072,126	12/1991	Proglar	250	548	
TMD	A20	5,110,514	5/1992	Soane	264	496	
TMD	A21	5,126,006	6/1992	Cronin et al.	438	702	
TMD	A22	5,204,739	4/1993	Domenicali	348	79	
TMD	A23	5,240,550	8/1993	Boehnke et al.	216	24	
TMD	A24	5,348,616	9/1994	Hartman et al.	216	48	
TMD	A25	5,392,123	2/1995	Marcus et al.	356	625	
TMD	A26	5,425,964	6/1995	Southwell et al.	427	10	
TMD	A27	5,452,090	9/1995	Proglar et al.	356	401	

EXAMINER:

*Thomas M. Dugan*

DATE CONSIDERED:

*Feb. 13, 2004*

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Information Disclosure Statement--PTO 1449 (modified)

**Form PTO-1449** (modified)

List of Patents and Publications  
For Applicant's Information  
Disclosure Statement  
(Use several sheets if necessary)

ATTY. DKT. NO. 5119-08601

SERIAL NO. 09/698,317

APPLICANT: Choi et al.

GROUP: 2859

FILING DATE: October 27, 2000

**U.S. PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
DMB	A28	5,480,047	1/1996	Tanigawa et al.	216	12	
DMB	A29	5,512,131	4/1996	Kumar et al.	438	595	
DMB	A30	5,515,167	5/1996	Ledger et al.	356	595	
DMB	A31	5,545,367	10/1996	Bae et al.	264	401	
DMB	A32	5,566,584	10/1996	Briganti et al.	74	401	
DMB	A33	5,633,505	5/1997	Chung et al.	250	491.1	
DMB	A34	5,724,145	3/1998	Kondo et al.	356	632	
DMB	A35	5,753,014	5/1998	Van Rijn	96	12	
DMB	A36	5,760,500	6/1998	Kondo et al.	310	12	
DMB	A37	5,772,905	6/1998	Chou	216	44	
DMB	A38	5,776,748	7/1998	Singhvi et al.	435	180	
DMB	A39	5,779,799	7/1998	Davis	118	663	
DMB	A40	5,802,914	9/1998	Fassler et al.	74	110	
DMB	A41	5,877,036	3/1999	Kawai	438	16	
DMB	A42	5,877,861	3/1999	Ausschnitt et al.	356	401	
DMB	A43	5,888,650	3/1999	Calhoun et al.	426	354	
DMB	A44	5,900,160	5/1999	Whitesides et al.	216	41	
DMB	A45	5,912,049	6/1999	Shirley	427	240	
DMB	A46	5,942,871	8/1999	Lee	318	611	
DMB	A47	5,948,470	9/1999	Harrison et al.	427	148	
DMB	A48	5,952,127	9/1999	Yamanaka	430	5	
DMB	A49	6,038,280	3/2000	Rossiger et al.	378	50	
DMB	A50	6,039,897	3/2000	Lochhead et al.	264	1,24	
DMB	A51	6,046,056	4/2000	Parce et al.	204	402.05	
DMB	A52	6,051,345	4/2000	Huang	430	5	
DMB	A53	6,074,827	6/2000	Nelson et al.	435	6	
DMB	A54	6,091,485	7/2000	Li et al.	356	73	
	A55	6,128,085	10/2000	Buermann et al.	356	364	

EXAMINER:

*Shuman M. Dwyer*

DATE CONSIDERED:

*Feb. 13, 2004*

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

**Form PTO-1449** (modified)

List of Patents and Publications

For Applicant's Information

Disclosure Statement

(Use several sheets if necessary)

ATTY. DKT. NO. 5119-08601

SERIAL NO. 09/698,317

APPLICANT: Choi et al.

GROUP: 2859

FILING DATE: October 27, 2000

**U.S. PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
AMB	A56	6,143,412	11/2000	Schueler et al.	428	408	
AMB	A57	6,168,845	1/2001	Fontana, Jr. et al.	428	65.5	
AMB	A58	6,180,239	1/2001	Whitesides et al.	428	411.1	
AMB	A59	6,204,922	3/2001	Chalmers	356		
AMB	A60	6,334,960	1/2002	Wilson et al.	216	52	

**FOREIGN PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES/NO
AMB	A61	00/54107	9/2000	WO	608F	7/00	
AMB	A62	01/33232	5/2001	WO	601R	—	
AMB	A63	01/33300	5/2001	WO	402K	5/24	
AMB	A64	244884	3/1987	EP	829C	33/34	
AMB	A65	733455	9/1996	EP	829C	33/34	NO
AMB	A66	2800476	7/1978	DE	603C	5/03	NO
AMB	A67	19648844	11/1999	DE	829C	59/02	NO
AMB	A68	1-196749	8/1989	JP	511B	7/26	NO

EXAMINER:

*Thomas M. Dougherty*

DATE CONSIDERED:

*Feb. 13, 2004*

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Information Disclosure Statement--PTO 1449 (modified)

<b>Form PTO-1449</b> (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		ATTY. DKT. NO. 5119-08601  APPLICANT: Choi et al.  FILING DATE: October 27, 2000	RECEIVED GROUP 3859 JUN 26 2002 GROUP 3600
OTHER ARTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
fmh	A69	Stewart, D.; "A Platform with Six Degrees of Freedom", Proc. of Inst. Mech. Engrs., 1965, 180, 371-378.	
fmh	A70	Paros, J.M.; Weisbord, L.; "How to Design Flexure Hinges", Machine Design, 1965, 151-156.	
fmh	A71	Raibert, M.H.; Craig, J.J.; "Hybrid Position/Force Control of Manipulators", 1981, 102, 126-133.	
fmh	A72	Hogan, Neville; "Impedance Control: An Approach to Manipulation", Journal of Dynamic Systems, Measurement and Control, 1985, 107, 1-7.	
fmh	A73	Hollis, Ralph; Salcudean, S.E.; Allan, A.P.; "A Six-Degree-of-Freedom Magnetically Levitated Variable Compliance Fine-Motion Wrist: Design, Modeling and Control", IEEE Transactions on Robotics and Automation, 1991, 7, 320-332.	
fmh	A74	Tomita, Y. et al.; "6-Axes Motion Control Method for Parallel-Linkage-Type Fine Motion Stage", Journal of Japan Society of Precision Engineering, 1992, 118-124.	
fmh	A75	Slocum, Alexander; "Precision Machine Design: Macromachine Design Philosophy and its Applicability to the Design of Micromachines", Proc. of IEEE Micro Electro Mech. Systems Workshop, 1992, 37-42.	
fmh	A76	Krug, Herbert; Merl, Norbert; Schmidt, Helmut; "Fine Patterning of Thin Sol-Gel Films", Journal of Non-Crystalline Solids, 1992, 447-450.	
fmh	A77	Arai, T.; Larssonneur, R.; Jaya, Y.M.; "Calibration and Basic Motion of a Micro Hand Module", Proc. of IECON, 1993, 1660-1665.	
fmh	A78	Peng, Zhi-Xin; Adachi, N.; "Compliant Motion Control of Kinematically Redundant Manipulators", IEEE Transactions on Robotics and Automation, 1993, 9, 831-837.	
fmh	A79	Rong, Y.; Zhu, Y.; Luo, Z.; Liu, X.; "Design and Analysis of Flexure-Hinge Mechanism Used in Micro-Positioning Stages", ASME, 1994, 2, 979-985.	
fmh	A80	Hashimoto, M.; Imamura, Y.; "Design and Characteristics of a Parallel Link Compliant Wrist", IEEE International Conference on Robotics and Automation, 1994, 2457-2462.	
fmh	A81	Merlet, J.P.; "Parallel Manipulators: State of the Art and Perspectives", Advanced Robotics, 1994, 8, 589-596.	
fmh	A82	Ananthasuresh, S.; Kikuchi, N.; "Strategies for Systematic Synthesis of Compliant MEMS", ASME, 1994, 2, 677-686.	
fmh	A83	Arai, T.; Tanikawa, T.; Merlet, J.P.; Sendai, T.; "Development of a New Parallel Manipulator with Fixed Linear Actuator", Proc. of Japan/USA Symposium on Flexible Automation, 1996, 1, 145-149.	
fmh	A84	Howell, L.L.; Midha, A.; "Loop-Closure Theory of the Analysis and Synthesis of Compliant Mechanisms", Journal of Mechanical Design, 1996, 118, 121-125.	
fmh	A85	Haisma, J. et al.; "Mold-Assisted Nanolithography: A Process for Reliable Pattern Replication", Journal of Vacuum Science and Technology, 1996, 14, 4124-4128.	
fmh	A86	Pernette, Eric; Henein, Simon; Magnani, Ivo; Clavel, Reymond; "Design of Parallel Robots in Microrobotics", Robotica, 1997, 15, 417-420.	

EXAMINER: Almar M. Dwyer DATE CONSIDERED: Feb. 13, 2004

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Information Disclosure Statement--PTO 1449 (modified)

Form PTO-1449 (modified)		ATTY. DKT. NO. 5119-08601	SERIAL NO. 09/698,317
List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		APPLICANT: Choi et al.	GROUP: 2859
		FILING DATE: October 27, 2000	GROUP 3600
tmp	A87	Rong, L.; Guang	"Dynamics of Parallel Mechanism with Direct Compliance Control", IEEE, 1997, 1753-1758.
tmp	A88	Mittal, Samir; Menq, Chia-Hsiang;	"Precision Motion Control of Magnetic Suspension Actuator Using a Robust Nonlinear Compensation Scheme", IEEE/ASME Transactions on Mechatronics, 1997, 2, 268-280.
tmp	A89	Physik Instruments,	Product Catalog for Micropositioning, 1997.
tmp	A90	Williams, Mark et al.;	"Six Degree of Freedom Mag-Lev Stage Development", SPIE, 1997, 3051, 856-867.
tmp	A91	Lee, Chang-Woo; Kim, Seung-Woo;	"Ultraprecision Stage for Alignment of Wafers in Advanced Microlithography", Precision Engineering, 1997, 21, 113-122.
tmp	A92	Kanetomo, M.; Kashima, H.; Suzuki, T.;	"Robot for Use in Ultrahigh Vacuum", Solid State Tech., 1997, 63-72.
tmp	A93	Goldfarb, M.; Speich, J.;	"Compliant Micromanipulator Design for Scaled Bilateral Telemanipulation of Small-Scale Environments", ASME, Dynamic Systems and Control Div., 1998, 64, 213-218.
tmp	A94	Koseki, Y. et al.;	"Design and Accuracy Evaluation of High-Speed and High Precision Parallel Mechanism", Proc. of IEEE, Intl. Conf. on Robotics & Automation, 1998, 1340-1345.
tmp	A95	Kim, Won-Jong; Trumper, David;	"High Precision Magnetic Levitation Stage for Photolithography", Precision Engineering, 1998, 22, 66-77.
tmp	A96	Mansky, P. et al.;	"Large-Area Domain Alignment in Block Copolymer Thin Films Using Electric Fields", Macromolecules, 1998, 31, 4399-4401.
tmp	A97	Wang, W.; Loh, R.; Gu, E.;	"Passive Compliance Versus Active Compliance in Robot-Based Automated Assembly Systems", Industrial Robot, 1998, 25, 48-57.
tmp	A98	Scheer, H.C. et al.;	"Problems of Nanoimprinting Technique for Nanometer Scale Pattern Definition", Journal of Vacuum Science and Technology, 1998, 16, 3917-3921.
tmp	A99	Xia, Y.; Whitesides, George;	"Soft Lithography", Annu. Rev. Mater. Sci., 1998, 28, 153-184.
tmp	A100	Tajbakhsh, H. et al.;	"Three-Degree-of-Freedom Optic Mount for Extreme Ultraviolet Lithography", ASPE, 1998, 18, 359-362.
tmp	A101	Lee, Dong Sung et al.;	"Ultra Precision Positioning System for Servo Motor-Piezo Actuator Using Dual Servo Loop and Digital Filter Implementation", ASPE, 1998, 18, 287-290.
tmp	A102	Wu, Wei et al.;	"Large Area High Density Quantized Magnetic Disks Fabricated Using Nanoimprint Lithography", 1998, Journal of Vacuum Science and Technology, 1998, 16, 3825-3829.
tmp	A103	Ohya, Y. et al.;	"Development of 3-DOF Finger Module for Micro Manipulation", Proc. of IEEE, Intl. Conf. on Intelligent Robots and Systems, 1999, 894-899.
tmp	A104	Tanikawa, T. et al.;	"Development of Small-Sized 3 DOF Finger Module in Micro Hand for Micro Manipulation", Proc. of IEEE, Intl. Conf. on Intelligent Robots and Systems, 1999, 876-881.
tmp	A105	Colburn, M. et al.;	"Step and Flash Imprint Lithography: New Approach to High-Resolution Patterning", Proc. of SPIE, 1999, 3676, 379-389.

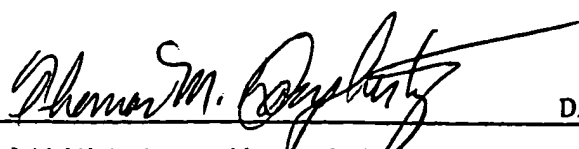
EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

<b>Form PTO-1449 (modified)</b> List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)		PAT. & TRADEMARK OFFICE JUN 26 2002 RECEIVED GROUP 3600	PAT. DKT. NO. 5119-0860 APPLICANT: Choi et al. FILING DATE: October 27, 2000	SERIAL NO. 09/698,317 GROUP: 2859
IMB	A106	Lucas Aerospace, Free-Flex Pivot Catalog. 1999		
IMB	A107	Goldfarb, M.; Speich, J.E.; "A Well-Behaved Revolute Flexure Joint for Compliant Mechanism Design", Journal of Mech. Design, 1999, 121, 424-429.		
IMB	A108	Geodetic Technology, G1000-PS Power Series Specifications, 1999, from <a href="http://www.hexapods.com">www.hexapods.com</a>		
IMB	A109	Hexel Corporation, Tornado 2000 System Specifications, 1999, from <a href="http://www.hexel.com">www.hexel.com</a>		
IMB	A110	Physik Instruments, PI Online-Catalog, 1999, from <a href="http://www.physikinstrument.com">www.physikinstrument.com</a>		
IMB	A111	Chou, Stephen; Zhuang, Lei; "Lithographically-induced Self Assembly of Periodic Micropillar Arrays", Journal of Vacuum Science and Technology, 1999, 17, 3197-3202.		
IMB	A112	Ruchhoeft, P. et al.; "Patterning Curved Surfaces: Template Generation by Ion Beam Proximity Lithography and Relief Transfer by Step and Flash Imprint Lithography", Journal of Vacuum Science and Technology, 1999, 17, 2965-2982.		
IMB	A113	Vanderbilt University Office of Transfer Technology; VU 9730 Specifications for Improved Flexure Device; 2001, from <a href="http://www.vanderbilt.edu">www.vanderbilt.edu</a>		
IMB	A114	Stix, Gary; "Getting More from Moore's", Scientific American, 2001, from <a href="http://www.scientificamerican.com">www.scientificamerican.com</a>		
IMB	A115	Trilogy Systems, Linear Motors 310 Specification, 2001, from <a href="http://www.trilogysystems.com">www.trilogysystems.com</a>		
IMB	A116	Choi, B.J. et al.; "Design of Orientation Stages for Step and Flash Imprint Lithography", Precision Engineering, 2001, 25, 192-199.		
IMB	A117	PCT International Search Report for PCT/US 00/30041, dated 10/15/2001		
IMB	A118	PCT International Search Report for PCT/US 01/26049, dated 2/19/2002		

EXAMINER:



DATE CONSIDERED:

Feb. 13, 2004

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent owner.

Information Disclosure Statement-PTO 1449 (modified)